

Please amend the application as follows:

**IN THE TITLE**

Please replace the current title, "ROUTING METHOD AND APPARATUS THAT UTILIZE DIAGONAL ROUTES," with "LP METHOD AND APPARATUS FOR IDENTIFYING ROUTES."

**IN THE SPECIFICATION**

Please delete the "Claim of Benefit to Prior Application" on page 1, lines 1-11, and insert therein a new Claim of Benefit to Prior Applications as follows:

**--CLAIM OF BENEFIT TO PRIOR APPLICATIONS**

This application is a continuation application of United States Patent Application entitled "Routing Method and Apparatus that Utilizes Diagonal Routes," filed on December 7, 2001, and having serial number 10/013,819. This patent application also claims the benefit of the earlier-filed U.S. Provisional Patent Application entitled "Method and Apparatus that Utilize Diagonal Routes", having serial number 60/325,748. and filed 1/19/2001; U.S. Provisional Patent Application entitled "Routing Method and Apparatus", having serial number 60/314,580, and filed 8/23/2000; and U.S. Provisional Patent Application entitled "Routing Method and Apparatus", having serial number 60/337,504, and filed 12/6/2001.--

Please delete the "Field of the Invention" on page 1, lines 10-12, and insert therein a new Field of the Invention as follows:

**--FIELD OF THE INVENTION**

The invention is directed towards LP method and apparatus for identifying routes.--

On page 5, lines 1-8, please delete the "Summary of the Invention", and insert therein a new Summary of the Invention as follows:

**--SUMMARY OF THE INVENTION**

Some embodiments provide an LP method that identifies routes. In some embodiments, this method is used by a router that defines routes for nets within a region of a design layout. Each net has a set of pins in the region. The method partitions the region into a set of sub-regions. For each particular net, the method identifies a set of route. Each route for a net traverses the sub-regions that contain the net's pins. Each route includes a set of route edge, and each route edge connects two sub-regions. Also, some of the identified routes have route edges that are at least partially diagonal.

The method formulates a linear-programming ("LP") problem based on the identified sets of routes for the nets. The method then solves the LP problem to identify one route for each net. In some embodiments, the formulated LP problem is an integer-linear-programming ("ILP") problem, and solving the ILP problem returns integer